Emerald Ash Borer Visual Survey 2004

Wisconsin Department of Natural Resources

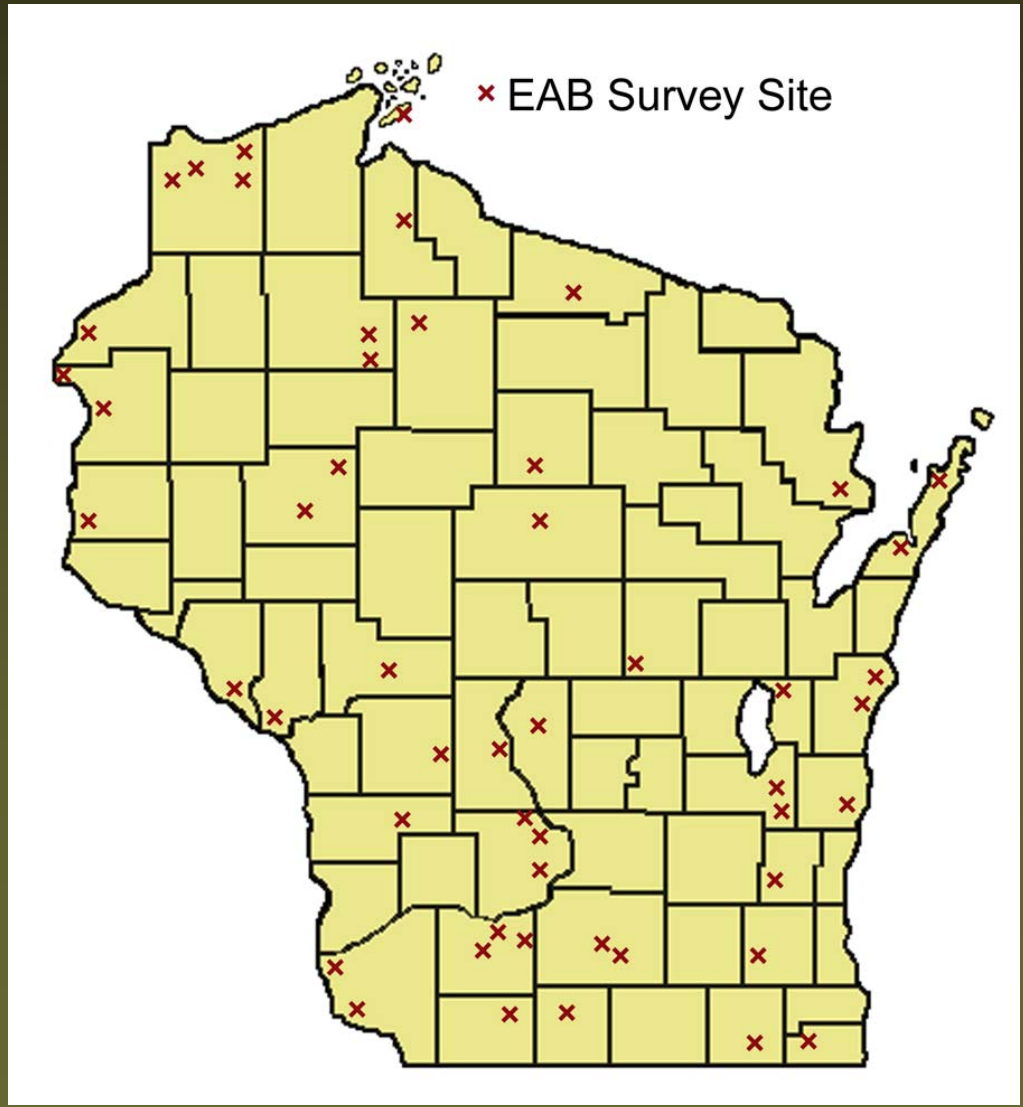
During the summer of 2004 the Wisconsin Department of Natural Resources conducted a visual survey of the ash resource in Wisconsin's State Park and State Forest campgrounds. The survey objectives were:

1) Collect baseline data on the current health status of Wisconsin's ash resource.

2) Detect any Emerald ash borer infestations.

2004 Visual Survey Methods

- Visual surveys were conducted June through September 2004.
- A total of 51 sites were surveyed throughout Wisconsin's State Parks and Forests (Refer to map at right).
- We focused our surveys on those State Parks and Forests that provide campground facilities because the risk of emerald ash borer infestation is higher in areas where firewood is frequently transported.
- Surveys were conducted by visiting a campground and walking through each campsite.
- Data were collected from a maximum of two randomly selected ash trees per campsite.



Visual Survey: Emerald Ash Borer Symptoms & Signs

Data collection included any ash pests or diseases present and emerald ash borer-like symptoms (branch dieback, epicormic sprouts, bark cracks and woodpecker damage) and signs (larvae, adults, S-shaped galleries, D-shaped exit holes).

Branch dieback

Epicormic sprouts

Bark Crack

Woodpecker

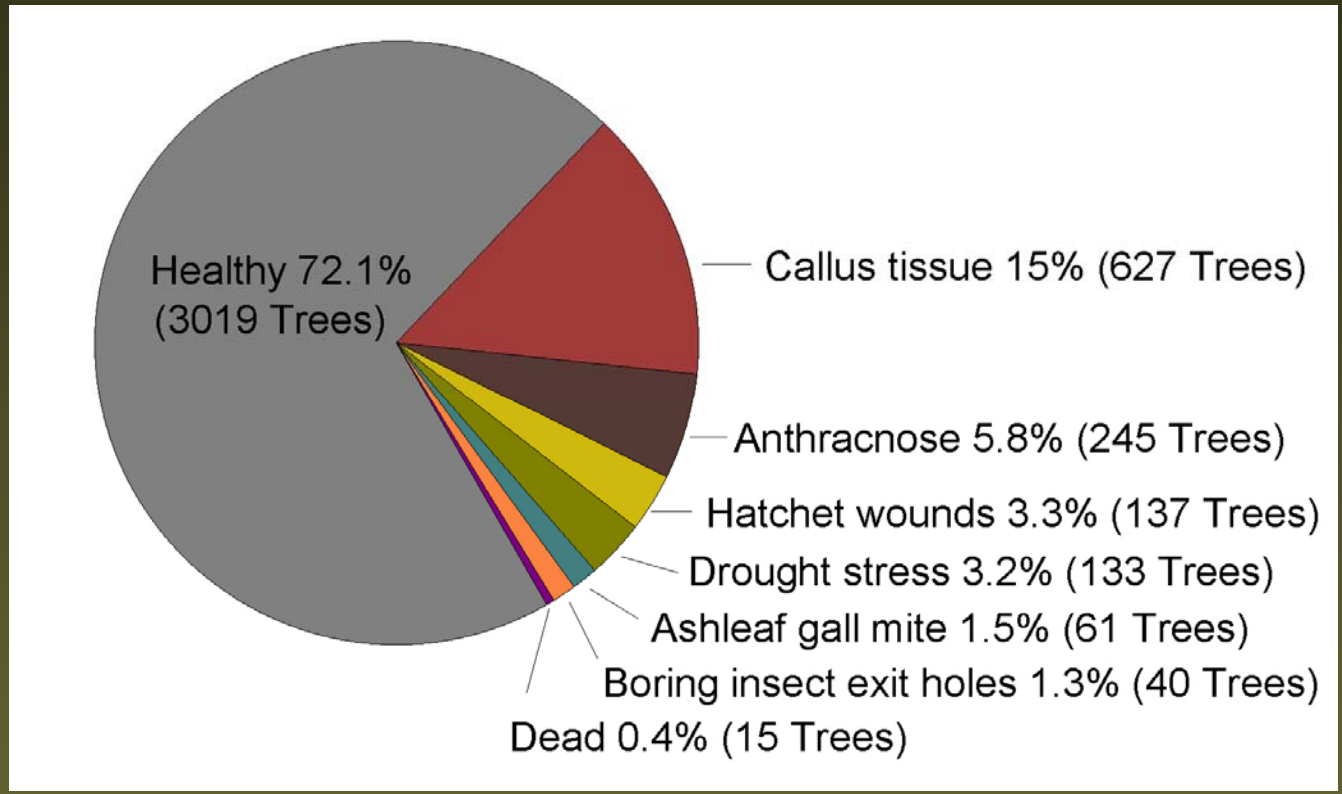
Adult

Larva

D-shaped exit hole

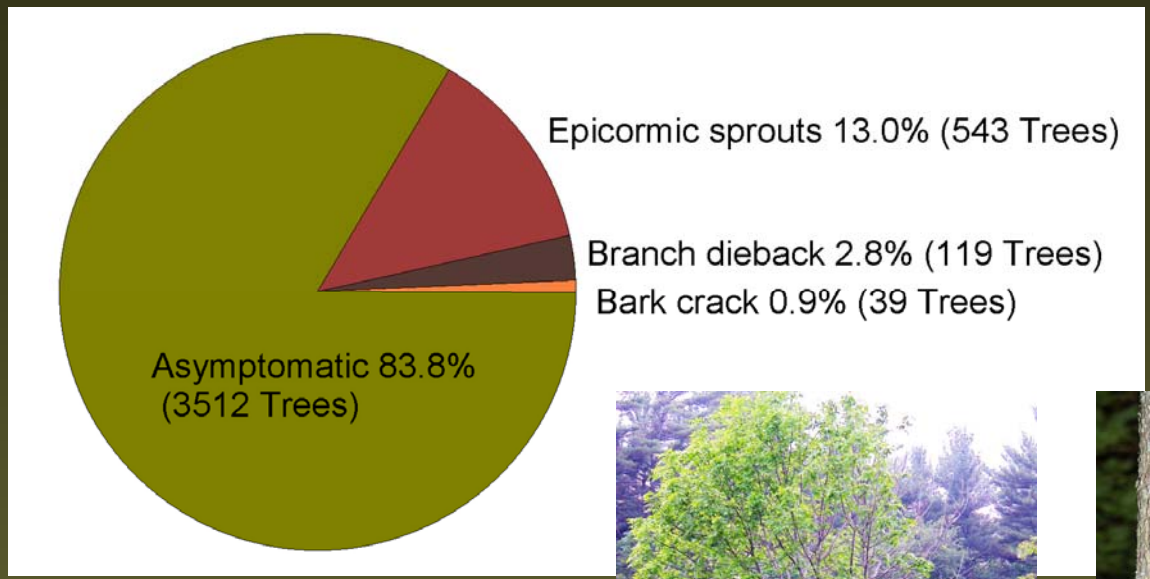
S-shaped galleries

Results: Insects, Pathogens and Abiotic Disorders Observed on Ash Trees



- No EAB detected!
- Total trees surveyed = 4189.
- Overall health status of ash is good.
    - 72.1% of ash healthy.
    - Health issues observed were minor.

Results: Emerald Ash Borer-like Symptoms Observed on Ash Trees



- Consider a follow-up visit if 2 or more symptoms or signs are present but emerald ash borer is not detected!
- Researchers have found that visual surveys may not detect infestations until emerald ash borer has been present for 3-4 years.

Commonly Encountered Ash Pests: Redheaded Ash Borer *Neoclytus acuminatus* (Fabricius)

- Exit hole more oval than D-shaped compared to emerald ash borer.
- Larval feeding galleries more random compared to the S-shaped pattern of emerald ash borer.

Gerald J. Lenhard, Louisiana State University, www.forestryimages.org

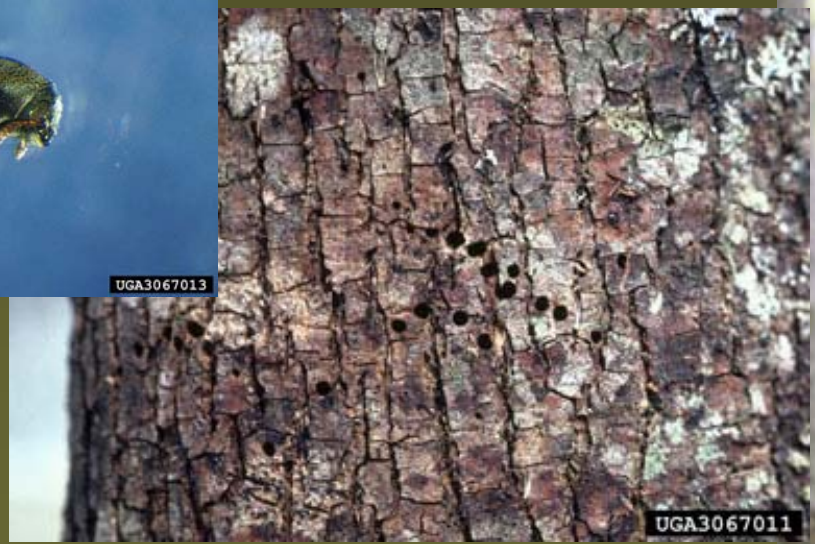
Commonly Encountered Ash Pests: Ash Borer
Podosesia syringae (Harris)

Whitney Cranshaw, Colorado State University, www.forestryimages.org

- Branch dieback similar to that produced by emerald ash borer.
- Exit hole larger and rounder than the D-shaped emerald ash borer's.
- Adult ash borer typically leaves behind its pupal case as it is exiting the tree unlike the emerald ash borer.

Commonly Encountered Ash Pests: Ash Bark Beetle (*Hylesinus* spp.)

- Three different species occur in Wisconsin.
- Exit holes smaller, rounder and more numerous than those of emerald ash borer.
- Larval feeding galleries radiate at a 90º angle to the egg gallery extending across the wood grain.



James Solomon, USDA Forest Service, www.forestryimages.org

Common Ash Pests and Diseases

Ashleaf Gall Mite
(*Aceria chrondriphora* Kiefer)

- Poses no major threat to tree health.
- Reduces esthetic value of tree.

Ash yellows
Phytoplasmalike organism

- Causes substantial growth reduction, decline and mortality of ash.
- Brooms are definitive, although inconsistent, symptoms of ash yellows.

Anthracnose
(*Gnomoniella fraxini* Redlin & Stack)

- Most common foliar disease of ash trees.
- Identified by its round to irregular brown colored blotches appearing along leaflet margins and midribs.
- Most prevalent during cool, wet springs.

Common Abiotic Disorders of Ash Trees

Drought

Repeated summers of drought stress can cause thin canopies with tufted foliage.

Vandalism

Callus tissue and hatchet wounds often result due to vandalism in State Park and Forest campgrounds.

Frost damage

Frost damage to the fine roots can result in severe branch dieback.